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PROGRESS OF AMERICAN COMMITTEE ON ELECTROLYSIS

REPORT TO AMERICAN WATER WORKS ASSOCIATION

Early in 1919, the American Committee on Electrolysis resumed its activities interrupted early in 1917 by the World War. Under date of October, 1916, the Committee issued in a small volume "A Preliminary Report Prepared for Submission to its Principals." Determination of methods of mitigation of electrolysis, based on the study of conditions found in utility systems and on laboratory research, constitutes the second part of the Committee's task. This is the work which has been in hand since the close of the war under the direction of the Technical Sub-Committee.

No change has occurred in organization membership of the American Committee; the same nine organizations have three representatives each. Some changes of representatives have been made, but many of the men in the Committee from the early days remain. Bion J. Arnold, of Chicago, continues as Chairman, and Dr. E. B. Rosa, of the Bureau of Standards, as Secretary. At a meeting March 31, 1919, the American Committee created a committee to cooperate with the Bureau of Standards in electrolysis research. This committee was organized August 16, 1919, as the Research Sub-Committee, and has seven members, one from each kind of interest represented in the American Committee. Each member was authorized to have the assistance of an expert in electrolysis, unless he himself could act as the expert representing his organization in field and laboratory work, and in conferences with the Bureau of Standards. Each organization undertook to bear its own expenses (including compensation of its expert) in cooperating with the Bureau of Standards. The members of the Research Sub-Committee and the additional experts are:

ORGANIZATION	INTEREST	MEMBER	EXPERT
American Gas Association	Supply systems for manufactured gas	H. C. Sutton	W. H. Fulweiler
American Railway Association	Electrified steam railways	E. B. Katté	
American Telephone and Telegraph Co.	Telephone and telegraph cables	H. S. Warren	Elam Miller
American Water Works Association	Water pipes	E. E. Minor	L. A. Hazeltine
National Electric Light Association	Power cables.	Philip Torchio	Alex. Maxwell
Natural Gas Association of America	Supply systems for natural gas	S. S. Wyer	
American Electric Railway Association	Electric street railways	L. P. Crece-lius	V. B. Phillips

H. S. Warren was elected chairman, and H. S. Sutton secretary.

The American Water Works Association, to meet its expenses in coöperating with the Bureau of Standards in the scientific investigation of electrolysis, appealed to its membership and to water companies and departments for subscriptions. To May 1, 1920, \$2,235 have been received by the Treasurer, and \$572.68 expended. The Bureau of Standards and the Research Sub-Committee are studying actively:

1. Automatic Sub-stations for Electric Street Railway Systems, and their effect upon electrolysis;
2. Three-wire installations for electric street railways, results attained and possible use;
3. Joint corrosion in gas and water pipe lines;
4. Electric drainage systems for pipe lines;
5. Analysis of soils as to qualities affecting electrolysis;
6. Fundamental study of corrosion;
7. Heating effect of stray currents on cable sheaths;
8. Explosions caused by stray electric currents on gas piping systems.

Field work by the Bureau of Standards in coöperation with Sub-committee has been, or is, in progress in the following cities:

1. Des Moines, Iowa—Automatic Sub-stations.
2. Springfield, Mass.—Three-wire railway systems.

3. Memphis, Tenn.—Joint corrosion, with reference to electrical drainage.

4. Kansas City, Mo.—Joint corrosion, with reference to electrical drainage.

5. Denver, Col.—Joint corrosion, with reference to electrical drainage.

6. St. Louis, Mo.—Joint corrosion, with reference to electrical drainage.

7. East St. Louis, Ill.—Joint corrosion, with reference to electrical drainage.

Studies of Joint corrosion have been suggested in the following cities: Pittsburgh,¹ Detroit, Chicago,¹ Dayton, Cleveland, Altoona, Nashville, Chattanooga, San Francisco, Los Angeles, New Orleans.¹

Chicago passed an ordinance in September, 1919, relating to the electrification of portions of the Illinois Central and the Michigan Central railways, in which provision is made for the adoption of such electrolysis mitigation measures as may be recommended as practicable by the American Committee on Electrolysis.

Publicity will be carefully controlled by the Committee. The Research Sub-committee has a Sub-committee on Publicity, whose members are: S. S. Wyer, of the National Gas Association; L. P. Crecelius, of the American Electric Railway Association, and Alexander Maxwell, of the National Electric Light Association.

The American Committee on Electrolysis has sub-committees also on:

A. Principles, Definitions and Theories.

B. Technical features of construction and operation.

C. Methods of making electrolysis surveys.

D. European practice.

Beginning in September, 1919, the Research Sub-committee has held frequent meetings. Several of its members and experts have joined the Bureau of Standards in investigations which the Bureau was conducting in various cities. The Bureau has assented to such modifications of its field work and reports that the Sub-committee can act thereon without prejudicing the various interests which the Sub-committee represents. The Bureau has also stated that its specific reports will not be published.

Your representatives advise the approval by the American Water Works Association of the practice of grounding the secondaries of

¹ Postponed indefinitely.

lighting transformers to water pipes, provided that the grounding is done in accordance with the rules of the "National Electrical Code" and the "National Safety Code." This practice has for its object the safe-guarding of life, and does not, in the opinion of your representatives, constitute any hazard to the piping system.

Your representatives wish to express appreciation of the able and loyal manner in which the expert representing the American Water Works Association is performing his duties and the very moderate charges which he is making for his valuable services.

ALFRED D. FLINN,
NICHOLAS S. HILL,
E. E. MINOR.